

ABSTRACT OF THE DISCLOSURE

A hydrodynamic coupling having a primary impeller, a secondary impeller. A drive shaft drives the primary impeller. The drive shaft has a first end, a second end, a central axis, and a prespecified segment between the first and second ends. There is at least one supply channel for introducing a working medium to the toroidal working chamber. The at least one supply channel is formed in the drive shaft at the central axis along the prespecified segment.. The plurality of evacuation channels evacuates the working medium from the toroidal working chamber, and the plurality of evacuation channels are formed in the drive shaft radially about the at least one supply channel. The plurality of evacuation channels are formed from the first end up to at least the second end with the first end being located a predetermined distance from the toroidal working chamber.